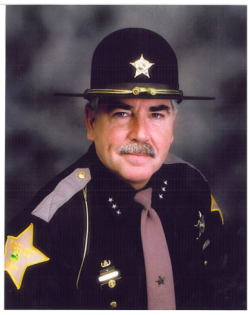
Annual Report 2015

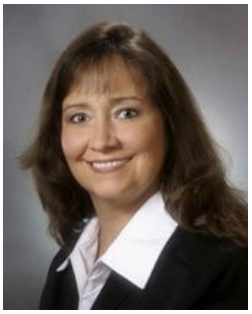
INDIANAPOLIS – MARION COUNTY FORENSIC LABORATORY

2015 Forensic Services Board

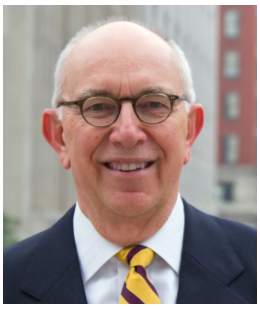
Richard Hite
Chief, Indianapolis Metropolitan Police Department



John Layton
Marion County Sheriff



Julie Voorhies
Marion County Auditor



Terry Curry
Marion County Prosecutor

Dr. Frank P. Lloyd, Jr.
Board Secretary
Marion County Coroner

Robert Hill
Board Chairman
Marion County
Chief Public Defender

Dr. Dean Hawley
Mayoral Appointee
IU School of Medicine

Dr. Sam Nunn
City-County Council Appointee
Professor, IUPUI (SPEA)

We are grateful for the dedication and wisdom of our Forensic Services Board. In spite of their busy lives, filled with other responsibilities, they selflessly gave of their time to serve in 2015. We also acknowledge the following individuals for the same commitment:
Colonel Byron (Reggie) Grandy, Marion County Sheriff's Department (proxy for Sheriff Layton);
Director Drew Carlson, Marion County Auditor's Office (proxy for Auditor Voorhies);
Cindy Oetjen, Deputy Prosecuting Attorney (Proxy for Marion County Prosecutor Curry)
Attorney David Lichtenberger, Office of Corporation Counsel.

Michael M. Medler, Laboratory Director

The Mission Statement of the Indianapolis-Marion County Forensic Services Agency (I-MCFSA) is as follows: "The Indianapolis-Marion County Forensic Services Agency shall provide forensic services to the Marion County Community by supporting the needs of the Criminal Justice System. The forensic services provided shall be built on a foundation of **quality, integrity, accountability and ethics**. All I-MCFSA personnel shall strive to meet forensic needs of today and into the future in all their work endeavors."

In 2015, the I-MCFSA analyzed 61,653 items of physical evidence which is an increase of 9% over 2014 totals. We also completed 11,189 cases, with our overall case submissions being 11,991 cases. The most significant areas of case backlogs are in latent fingerprint development, serology, and DNA in which our six week case completion benchmark was not achieved. We reviewed the processes, in latent prints and serology/DNA, as it relates to firearms cases and made changes to policy regarding the level of criminal cases that are processed in both of these units. This allowed us to reduce the backlogs and focus on homicide cases and other violent crimes.

The I-MCFSA continues to be a significant part of the criminal justice system in Indianapolis and Marion County. Oftentimes, the reliance on forensic science by investigating agencies puts added stressors on an already under resourced agency. Notwithstanding, our personnel have met challenges on criminal casework that have both solved and potentially prevented further criminal activity in the community. Our personnel commit to the words of Dr. Paul Kirk expressed in the 1950's in support of Dr. Edmund Locard's "Exchange Principle", the following:

"Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as a silent witness against him. Not only his fingerprints or his footprints, but his hair, the fibers from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects. All of these and more, bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong, it cannot perjure itself, it cannot be wholly absent. Only human failure to find it, study and understand it, can diminish its value."

Michael M. Medler
Laboratory Director

Forensic Service Built on a Foundation of Quality, Integrity, Accountability, and Ethics

Overview

The I-MCFSA (Crime Lab) began operations in 1986, providing services to all law enforcement agencies in Marion County. The Crime Lab provides scientific testing on items of evidence recovered in criminal cases by its own Crime Scene Specialists at various police agency crime scenes, Forensic Evidence Technicians working in the Marion County Morgue, and any other police investigators working crimes that occurred in Marion County. Forensic analysis is conducted in the fields of Drug and Trace Chemistry, Latent Fingerprints, Serology & DNA Analysis, Firearms, Toolmark, Footwear & Tiretrack Comparisons, Forensic Documents, Photography, Videography and Digital Imaging. The laboratory provides expert testimony in these areas when requested.

Staffing

The I-MCFSA is authorized 68.6 full time equivalent employee positions. A total of eight (8) open positions remained unfunded or unfilled at the end of during 2015: one (1) Forensic Scientist-Biology position, six (6) Crime Scene Specialists and one (1) unfunded position.

I-MCFSA
Forensic Evidence Specialists

Caseload

Over 61,600 items of evidence were analyzed and more than 11,100 cases were completed by the Crime Lab in 2015. Some of the larger areas included Drug Chemistry with over 20,000 evidence items, the Crime Scene Unit with over 12,000 evidence items, and the Biology Unit with almost 6,000 evidence items analyzed during the year.

The I-MCFSA is still working toward a goal of an average six-week turnaround in each laboratory section. Personnel shortages caused larger turnaround times again during 2015. The Crime Scene Section, Forensic Evidence Technician Section and the Drug Chemistry Section were the only sections meeting this goal at year end. Firearms analyses were averaging less than nine (9) weeks turnaround with other processing/analyses taking significantly longer.

Criminalistics Unit – Firearms Section

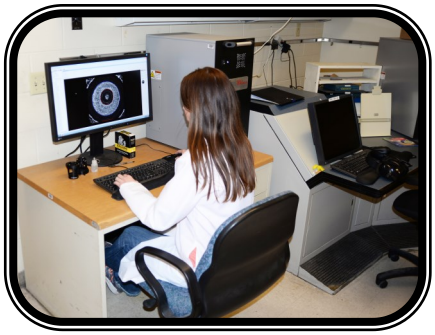
The Firearms Section's principle function is to determine whether a bullet, cartridge case or other ammunition component was fired by a particular firearm. The science of firearms identification extends beyond the comparison of bullets and cartridge cases to include operational knowledge of various types of firearms, the restoration of obliterated serial numbers, the detection of gunpowder residues on garments and the estimation of a muzzle to target distance. Additional examinations performed by the Firearms Section include toolmark analysis, footwear and tire track analysis, and physical match analysis. The Firearms Section staffing levels in 2015 remained at eight personnel consisting of five full-time and one part-time Firearm Examiners and two full-time Firearm Technicians with a combined total of eighty-six years of experience.

The Firearms Section utilizes two Forensic Technology Incorporated BrassTrax acquisition stations, in conjunction with the ATF National Integrated Ballistics Information Network (NIBIN) as investigative tools. This system enables microscopic characteristics from fired cartridge cases and test shot cartridge cases from submitted firearms to be searched against an ever-growing database. NIBIN has the potential to connect crimes (NIBIN hits) that otherwise may have never been associated. In 2015, The Firearms Section entered 519 evidence fired cartridge cases and 1,232 test shot fired cartridge cases from submitted firearms into NIBIN. These entries resulted in 52 confirmed NIBIN hits and 32 unconfirmed NIBIN hits. As of December 31, 2015, there have been 40,624 NIBIN entries resulting in 797 NIBIN hits since the installation of this technology.

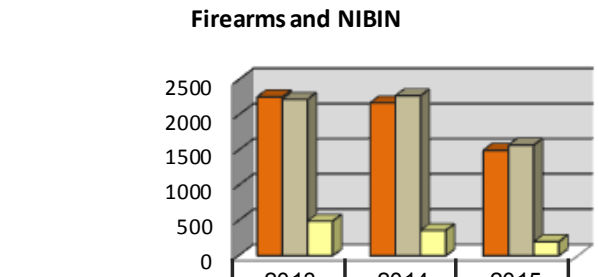
The Firearms Section had an active year, in 2015, despite instituting a backlog reduction program that eliminated Laboratory Generated Request casework. As of May 2015, the Firearms Section began operating on a Request Only case management system. As a result of this reduction program, overall submissions and backlog levels did decrease; however, through ongoing education and IMPD Command Directives it is expected that previous request submissions and resultant backlog levels will be realized. A trend that continued into 2015 was the submission of large volumes of items per case request and multiple inter-comparison requests. Due to two exceptionally large IMPD investigations at different times in 2015, it became necessary for two Examiners to be solely detailed to those cases.

The Firearms Section continued to offer user-agency education consisting of two training lectures for the Public Defender's office, ongoing lectures for I-MCFSA Crime Scene Unit, law enforcement agencies, judicial system agencies, and conducting tours. All Firearm Examiners/Technicians completed training in black powder firearms, with three Firearm Examiners and one Firearms Technician attending the Association of Firearms and Toolmarks Examiners Educational Conference in Dallas, Texas. Two of the attendees were self-funded.

The Firearm Section upgraded the laboratory purchased NIBIN BrassTrax acquisition station from 3D to HD3D technology and received a donation of 14,000 rounds of ammunition for forensic use, from ATF, which lessened that line item cost on the laboratory.



Cartridge Entry into BrassTrax



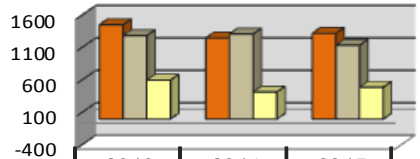
	2013	2014	2015
Case Submissions	2257	2173	1499
Completed	2223	2274	1572
Backlog	492	360	199

Criminalistics Unit - Latent Print Section

Latent prints are invisible replications of the details found in the friction ridge-covered skin on the fingers, palms, toes and soles of a person's feet. Once the print is visible it must be preserved by the use of photography, the application of tape, or some other means so that it can be examined and compared. Latent print technicians completed nearly 1000 print processing cases in 2015. A total of 343 subjects were identified on latent prints developed by the Crime Lab during the year, many of which resulted from serious and violent crimes. The latent print section now has four (4) full time technicians for processing cases. These cases consist of many different items ranging from firearms, electronics, and other non-porous items to robbery notes, baseball bats and other porous items. Many items yield prints for comparison to either identify or eliminate a subject. The latent print technicians also collect possible DNA evidence from items by swabbing textured surfaces for skin cells. These textured areas are the least likely to be receptive to fingerprints. Many of these swabs have aided in the identification of subjects in the investigation.

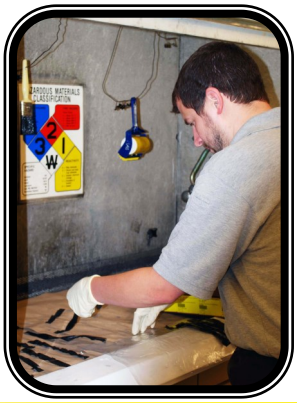
The latent print section took on the task of training a new examiner in 2015 after the retirement of one of their examiners. While the trainee is not yet completing case work, the two (2) full time examiners within the section completed 155 comparison cases in 2015, many of which contained multiple prints for comparison. Those prints were either compared to known subject prints or entered into the Automated Fingerprint Identification System (AFIS) which searches the data base for possible subjects. While AFIS is a helpful tool for the examiner, the examiner must still complete the side by side comparison of the unknown prints to the known prints in order to determine identification or elimination.

Latent Fingerprint Processing & Comparison



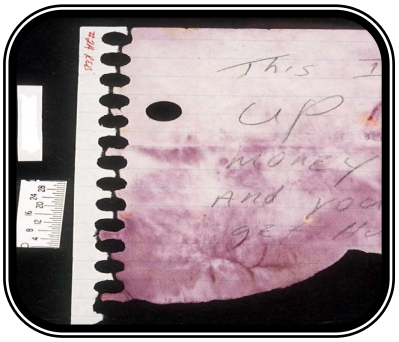
	2013	2014	2015
Case Submissions	1453	1249	1320
Completed	1286	1310	1137
Backlog	600	416	489

Processing Evidence for Latent Prints



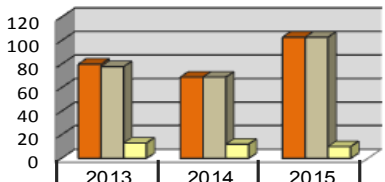
Criminalistics Unit - Forensic Documents Section

The Forensic Documents Section is staffed with one (1) Forensic Document Examiner. In order to comply with accreditation criteria, the I-MCFSA has a Memo of Understanding (MOU) with the Indiana State Police Laboratory for case identification verifications and technical review requirements. In 2015, the Indianapolis area saw an influx of robberies at local pharmacy stores. Individuals would hold up the pharmacies, show a demand note and leave with narcotics. Many of the demand notes were linked to each other by the handwriting appearing on the notes. Individuals were also identified through their fingerprints left on those demand notes. Some individuals arrested were juvenile offenders, as well as, adult offenders. As the notes were processed and prints were identified, these pharmacy robberies have greatly subsided. These cases clearly demonstrate how closely the Latent Prints and the Forensic Documents sections work together.



Physical Match

Forensic Documents



	2013	2014	2015
Case Submissions	80	69	103
Completed	78	69	103
Backlog	13	12	10

Chemistry Unit - Drug Chemistry Section

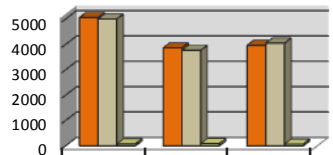
At the close of 2015, the Chemistry Section had seven (7) full time drug chemists, including the supervisor. Training was completed for three (3) drug chemists who were hired in 2014. One (1) additional drug chemist was hired and trained due to a chemist transferring to an administrative role in the laboratory. Also, the role of assistant supervisor, vacant for a period of time, was taken on by an existing chemist.

Drug Chemistry saw a significant increase in submissions and amounts of suspected methamphetamine for quantitative analysis (percent purity), which are charged at the federal level. Despite those increased submissions, as well as an increase in overall case submissions, the added production from increased staffing allowed for a significant decrease in case turnaround time. Further casework changes included a continued upward trend of suspected heroin cases. There continues to be a likelihood of those heroin cases containing fentanyl, which may be linked to the increasing instances of drug overdoses in the county.

Multiple tests are utilized to confirm the presence of all controlled substances reported in casework. The testing performed on each piece of evidence is determined by sound scientific principles and procedures accepted and used by Forensic Scientists and accredited laboratories internationally. The Indianapolis Metropolitan Police Department's preliminary testing program, which started in 2005, is still successfully spot testing commonly found drugs of abuse, resulting in fewer submissions to the Crime Lab's Drug Chemistry Section. Only cases which are scheduled for trial, or where testing is requested for confirmatory drug testing, are submitted to the laboratory.

Heroin

Drug Chemistry

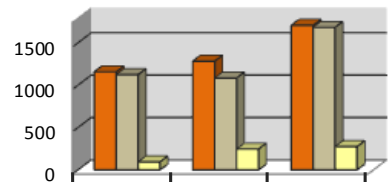


	2013	2014	2015
Case Submissions	5058	3865	3967
Completed	5002	3766	4051
Backlog	79	85	70

Chemistry Unit - Trace Chemistry Section

The Trace Chemistry Section is staffed with two (2) Trace Chemists. This section analyzes and/or compares hairs, fibers, fire debris, blood alcohol, physical matches, and other evidentiary items. Blood alcohol and fire debris cases continue to make up the large majority of case submissions. Of particular note, the unit saw a sharp rise in blood alcohol case submissions in 2015. Despite the additional caseload, the overall case turnaround time has remained steady. As resources become available in 2016, drug chemists will be cross-trained to perform analyses in this unit to aid in backlog reduction.

Trace Chemistry



	2013	2014	2015
Case Submissions	1157	1283	1706
Completed	1124	1084	1682
Backlog	94	245	274

Preparing Samples for Blood Alcohol Analysis

Biology Unit - DNA & Serology Sections

The Biology Unit consists of two sections: DNA Analysis and Serology. It is staffed with seven (7) DNA Analysts, two (2) Serologists, and a Technician. One of the DNA analysts is the supervisor of the Unit and another is the DNA Technical Leader who is responsible for overseeing all of the DNA analysis. All of the DNA Analysts are also proficient in serological analysis. There is currently one person training to become a DNA analyst.

All DNA cases begin with the examination of evidence by Forensic Scientists. They examine the evidence employing various visual, microscopic, and chemical techniques in search of potential biological stains. Once found, the Serologist documents, identifies, and prepares samples of the biological stains for the DNA Section. Clothing, bedding, weapons, and other evidentiary items are carefully documented and sampled during the Serologist's search for stains of interest.

Preparing DNA Evidence

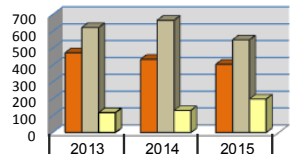
Preparing Serology Evidence

The DNA Section develops DNA profiles from evidentiary samples for comparison with DNA profiles of suspects, or for submission into the CODIS database. This database is particularly useful when a biological sample is obtained from the crime scene and known suspects do not exist. CODIS allows unknown profiles to be searched against other profiles in the database, which are generally those of convicted felons, arrestees (in some states) and unknown profiles from other cases. At the present time there are almost fifteen million (15,000,000) DNA profiles in the national database.

In 2015, the DNA section validated new equipment and technology to increase the amount of data generated by the analysis of evidence. Two new genetic analyzers were installed in the lab and new DNA analysis kits were validated. These kits analyze more areas of DNA (21 versus 15), which allows DNA profiles from other countries to be compared to the CODIS database. New technology was introduced to more accurately determine the quality and quantity of DNA extracted from evidentiary samples. Two extraction robots were also installed. These machines allow the analyst to rapidly process samples thus increasing throughput. New computer software was installed to enable the use of the new technologies.

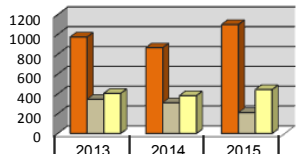
The Biology Unit casework resulted in fifty-nine (59) confirmed CODIS hits during 2015, including eleven (11) homicide cases, nine (9) sexual assault cases, twenty-three (23) burglaries, four (4) armed robberies, two (2) robbery/Police Action Shootings, and ten (10) miscellaneous offenses. These are cases which may have potentially remained unsolved, or taken significantly longer to solve, without the use of CODIS.

DNA



	2013	2014	2015
Case Submissions	473	434	405
Completed	623	666	550
Backlog	118	131	199

Serology



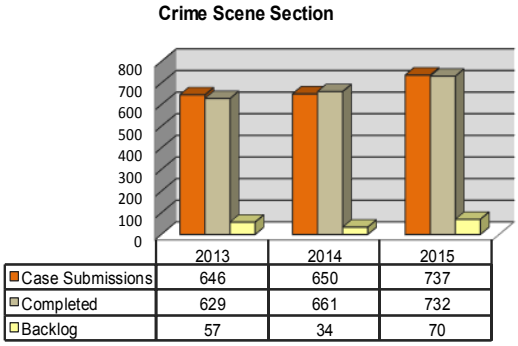
	2013	2014	2015
Case Submissions	974	866	1100
Completed	345	310	211
Backlog	405	382	443

Crime Scene Unit - Crime Scene Section

The Crime Scene section is the only section staffed 24-hours a day and 365 days a year. There were a total of 12 full time Crime Scene Specialists on staff at year's end, including the unit Supervisor and two (2) Technical Team Leaders. This number has slightly increased from the previous year with the addition of four (4) new Crime Scene Specialists in June of 2015, as well as a second Technical Team Leader in September 2015. The remaining six (6) open positions have identified individuals to be hired in January 2016, allowing the section to reach its goal of sixteen (16) for full staffing. There was a continued improvement in completed reports and case notes by team members, which led to continued satisfaction from our clients (detectives, prosecutors and defense attorneys).

In 2015, the section responded to a total of 736 crime scenes, completing 732 of those scenes. The backlog stood at 70 cases by year's end. The agency goal of a 42 day case completion was met with an average turnaround time for the unit of 32 days. These numbers illustrate a commitment by the team members to provide a quality product while completing searches, documentation, evidence collection, and scene sketching, along with still and video photography.

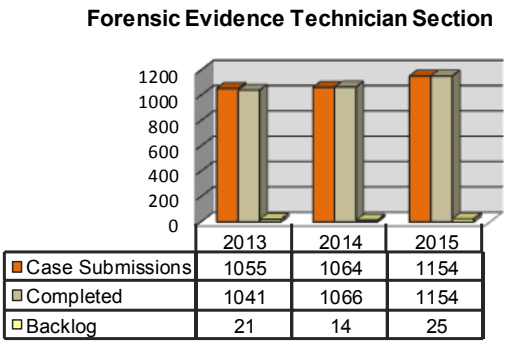
Evidence Collection Search



Crime Scene Unit - Forensic Evidence Technician Section

The Forensic Evidence Technician (FET) Section attends autopsies involved in investigations for the purposes of collecting physical evidence including clothing, blood, hair, fibers, touch DNA and other trace evidence, in addition to rolling of fingerprints for identification. The section consists of three (3) individuals, including the Technical Leader. The FETs also have secondary responsibilities for processing evidence items collected at autopsy, along with the retrieval and processing of sexual assault kits from various hospitals in Marion County. The FETs are cross trained to assist with latent print processing of evidence to help alleviate the backlog of evidence processing requests. The FETs perform crime scene video duplication and uploading, maintaining the crime scene library, and are responsible for maintaining the supplies and camera equipment for the entire Crime Scene Unit.

In 2015, the section worked a total of 1,154 cases which includes sexual assault processing, while completing 1,154 and having a backlog of 25 at year's end. The turnaround time for the section was 23 days which is under the agency's 42 day goal.



Collection of Evidence at Autopsy

Administrative Unit

Overview

Administrative staffing consists of ten and six-tenths (10.6) positions (the 0.6 representing a part time position), including: a Director, Chief Deputy Director, Quality Assurance Manager, Deputy Director-Forensic Operations, Deputy Director-Forensic Administration, Forensic IT Manager, four and six-tenths (4.6) Forensic Evidence Specialists, and a custodian. Areas of responsibility include the quality assurance program, budget management, purchasing, information technology, security, human resources, grant management, evidence handling and administrative functions.

Staffing

The agency closed the year with seven (7) vacant positions and one (1) unfunded position.

Accreditation

The I-MCFSA maintained its American Society of Crime Laboratory Directors/Laboratory Accreditation Board–*International* Accreditation during 2015, successfully completing the annual surveillance visit. The purpose of this accreditation includes: to improve the quality of laboratory services; to maintain standards by which the laboratory can assess its performance and strengthen the operation; to provide an independent, impartial, and objective system for a total operational review, and to offer to the general public and to users of laboratory services a means of identifying those laboratories which have demonstrated compliance with established standards.

Evidence Management

Evidence submission/release and forensic analysis triage are critical functions of the laboratory, which is the responsibility of three (3) Forensic Evidence Specialists, within the Forensic Administration Section. In 2015, there were approximately 45,000 items of evidence submitted or released by this section, in addition to triaging 4,506 requests for forensic analysis.

Legal Document Management

Subpoena Duces Tecum/Request for Production of Documents occur on a daily basis. In 2015, there were approximately 156 orders completed by the Forensic Administration Section.

Grant Management

A component of the continued success of this agency is the receipt of State and Federal Grant monies. This agency continually pursues grant opportunities and has been fortunate in receiving federal and local awards. The I-MCFSA was successful in receiving grant awards totaling $475,674 for the purchase of equipment for several sections of the laboratory, to provide training and development for the employees, to purchase supplies, to assist in the analysis of DNA cases and to provide grant funded personnel and overtime for various sections of the laboratory to assist in decreasing the overall laboratory backlog.

Training and Tours

Over 783 people, including Marion County Judges, police officers and college students, received training and/or tours from Crime Lab personnel during 2015. General evidence technician courses were again provided to IMPD Evidence Technicians and recruit classes.

Administrative Unit

Procurement

A critical function of the Operations Section is Procurement. Procurement is responsible for handling all purchases of supplies and services, while working with vendors, the City's Legal Department and Purchasing Division. A wide and diverse range of items must be purchased on a daily basis in support of the broad spectrum of mission requirements seen by the I-MCFSA. The process of purchasing an item starts with identifying what is needed and figuring out what specific standards need to be met. After going through a lengthy process of identifying vendors; ensuring quotes meet established specifications; ordering and inspecting items after delivery, payment arrangements can then be initiated. When equipment is being replaced, a coordination of efforts will be required to dispose of old equipment.

This agency cannot function without the proper support of a functional procurement process. Weaknesses in the procurement function can and will weaken the agency's ability to meet its organizational mission objectives.

Budget

Continued budgetary restrictions and challenges remain in 2015. The operational budget is one of the most important resources available. The budget is designed to cover all expected expenditures for the year. The budget is the resource called upon to deal with unexpected situations. Careful monitoring of the budget, including review of future requirements is crucial for early identification of potential funding shortfalls, requiring constant monitoring of spending as compared to the annual spending plan that was created at the beginning of the year. For 2015, this agency met all of its budgetary objectives.

ANNUAL BUDGET

	2013	2014	2015
Annual Budget	$6,884,418	$7,025,326	$7,485,594
Expenses			
Personal Services	$5,639,553	$5,628,872	$6,003,238
Materials and Supplies	$ 439,507	$ 357,755	$ 412,610
Services and Charges	$ 759,483	$ 870,877	$ 734,915
Properties and Equipment	$ 45,875	$ 167,822	$ 334,831
Funding Sources			
County General Fund	$5,880,872	$5,825,312	$6,348,802
State and Federal Grants	$1,003,546	$1,115,014	$1,136,792
Public Safety Income Tax	$ 0	$ 0	$ 0
Cumulative Capital Imp. Fund	$ 0	$ 85,000	$ 0

Information Technology

Final steps were completed to position the IT infrastructure for the planned implementation of Version 5 of the LIMSPlus case management software. Preparations included Microsoft Office upgrade, Windows upgrade and upgrading the server operating systems. Hardware was purchased in anticipation of using tablets at the crime scenes. Testing of the tablets will begin in mid-2016. New software to be used in creating scaled crime scene diagrams was installed and training has started. Training should be completed in Q1 of 2016.